FACT SHEET FOR NPDES PERMIT WA0037282
FACILITY NAME: FORT FLAGLER STATE PARK

SUMMARY

Fort Flagler State Park was established by the U.S. Army in the early 1900s and became a state park in the early 1970s. Serving the east side of the park is a lagoon system which is discussed and covered under this permit. The eastern portion of the park has dormitories (with showers), houses, a mess-hall kitchen, youth hostel, and other buildings. There is a campground on the west side of the park that is served by on-site septic systems which are not covered under this permit. The eastern portion of the park was estimated in 1979 to have a maximum usage of 8,000 visitors per month. The facility was originally covered under a state waste discharge permit as a discharge to ground. However, because the upper lagoon combines wastewater with a seasonal creek and because the facility discharges to beach sands with close proximity to Admiralty Inlet, the discharge is considered to be to surface waters, and therefore, requires a National Pollutant Discharge Elimination System (NPDES) permit. Because this facility is sub-standard and incapable of meeting current standards, this permit will allow continued use of the existing treatment system only until September 30, 2005, at which time the Park will be required to cease discharges to/from the existing facility.

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the NPDES permits, which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the state of Washington on the basis of Chapter 90.48 Revised Code of Washington (RCW) which defines the Department of Ecology's (Department) authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the state include procedures for issuing permits [Chapter 173-220 Washington Administrative Code (WAC)], technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least 30 days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	Washington State Parks and Recreation Commission
Facility Name and Address	Fort Flagler State Park 10541 Flagler Road Nordland, WA 98358
Type of Treatment:	Facultative Lagoon without aeration and no disinfection
Discharge Location	Unnamed seasonal creek and beach sands to admiralty inlet Latitude: 48º 05' 28" N Longitude: 122º 41' 30" W.
Water Body ID Number	48122A6J9

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

The lagoon system serving the eastern portion of Fort Flagler State Park was originally constructed in 1965 by the U.S. Army to serve the Fort. A modification was proposed in 1979 and completed in the early 1980s. The modification consisted of adding a second "polishing" pond that allowed a seasonal creek and marsh to flow into this upper pond. Discharge monitoring records are non-existent. The Permittee has not sampled the facility influent or effluent for flow or any other parameter, so very little is known about the influent or treatment capability of the facility.

COLLECTION SYSTEM STATUS

A report was issued by Parks which evaluates the collection system (Moore, 2000). The report stated that the collection system is in a very poor state of disrepair. Clay and iron pipes were installed before World War I. The pipes are cracked and leaking into the ground or being infiltrated by ground water. The report estimated that as much as 80 gallons per minute (gpm) [0.12 million gallons per day (mgd)] of clear water flow were seen in the lower end of the collection system following storms. However, Parks has begun to replace the entire collection system with a new gravity system consisting of PVC pipe and new manholes.

TREATMENT PROCESSES

The influent from the east side of the park enters a lower of two lagoons. The lower lagoon was at one time lined with on-site clays or bentonite. There is an emergency over-flow from the lower lagoon directly to the Sound. The original system, installed in the early 1900s, discharged directly to the Sound without treatment and a lagoon was added in 1965. There is no aeration of the lower lagoon. When the lower lagoon reaches a certain level, the lagoon water is pumped up to another lagoon basin next to the lower lagoon. The upper lagoon is unlined and joined by fresh water from a seasonal creek and marsh. The creek and marsh drain a large portion of wooded area on the south eastern portion of the park (approximately 350 acres). The lagoons receive their greatest loading during the summer "camp" season. During the winter, when the precipitation adds to the lagoons, creek and marsh, the wastewater will overflow. The overflow passes through a swale and then down a grassy slope to infiltrate to a shallow basin approximately 55 feet from the high water line.

A Department report (Erickson, 1995) evaluated the potential for the site to contaminate ground water. The report determined that because of the permeable surficial soils and shallow water table, the upper aquifer is susceptible to ground water contamination from surface discharges. The potential sources of contamination are: 1) leakage from the infiltration pond, 2) infiltration form the percolation bed, and 3) leakage from the primary pond. The report further recommended that ground water monitoring be initiated at the site. It recommended that at a minimum, the monitoring consist of an up gradient well and two down gradient wells (one well south of each pond. However, because of the condition of the treatment system with deteriorating lagoons without liners and influx of surface water, it may be more economical to replace the system with a more modern system than to fix the old system.

There is no industrial or commercial discharge at the Fort Flagler facility and none is expected in the future.

The plant is described as Class I and requires an operator certified to have a Group I certification. There is currently a Group I operator on staff with the Fort Flagler Park. However, there has been no testing of the facility and it does not appear to be monitored or controlled in any way other than to keep pumps running and the facility discharging.

Parks has requested appropriations from the state Legislature to upgrade the facilities at the park. Parks has stated that they will be working on the water system before working on the sewage system. The current estimate for repairing the collection system is $416,880 (Moore, 2000). These funds have not yet been appropriated. Nor has there been a request for funds to fix the sewage system. However, Parks may request funds to replace the sewage facility in the next biennium starting in July 2003. Parks has estimated the total cost of replacing the collection system and sewage treatment system to be about $1.4 million. Parks has placed Fort Flagler second on their priority list for upgrades and will be seeking approximately 2.5 million for water and sewage improvements.

Parks have proposed to install a large onsite septic system in an upland region of the park. The current proposal would be to have one or two large septic tanks and pump to a drainfield located in sandy soils at an elevation of approximately 120 feet above mean lower low water.

DISCHARGE OUTFALL AND INFILTRATION BASIN

No legitimate outfall exists at this facility. The bulk of effluent is discharged through an infiltration basin that is approximately 55 feet horizontally and less than 10 feet vertically from the high tide line. The primary lower lagoon has an emergency overflow pipe that discharges to the Sound via a pipe buried next to a wooden pier structure. Drawings on file with the Department show the outfall extends along side of the pier approximately 125 feet horizontally east (into the bay) of the high tide mark. The facility has overflowed through the outfall at least once in the last eight years according to conversations with Park employees during an August 2000 inspection. The infiltration basin is underlain by unconsolidated glacial deposits that overlie sedimentary bedrock (Erickson, 1995). The soil of a test boring near the infiltration basin consisted of sand and silty sand separated by a silty clay layer at 3.6 to 5.5 feet below the ground surface. Dissolved contaminants will move laterally and eventually discharge to Admiralty Inlet.

Primary and un-disinfected effluent is discharged from the facility to a seasonal creek/pond and then to Admiralty Inlet via groundwater. A new treatment system, including disinfection would be required in order for the discharge to come into compliance. Engineering is planned for the system, but details have not been completed.

Because the existing system is sub-standard, cannot reliably meet surface water quality standards for protection of human health and the environment and does not comply with the requirements of chapter 173-221WAC, this permit will allow the existing treatment system to operate only until September 30, 2005. It is anticipated that State Parks will install Large On-Site Sewage Sytems for wastewater management after this date.

RESIDUAL SOLIDS

No attempt has been made by the Permittee to dispose of accumulated biosolids in either lagoon. No testing has been conducted on the amount of accumulated biosolids. In anticipation of discontinuing the use of the existing system, the Permittee will be required to submit a plan for decommissioning the sewage lagoons and removal of accumulated biosolids by March 1, 2005. This plan must include actions necessary to comply with the State's biosolids regulations, chapter 173-308.

PERMIT STATUS

The previous permit for this facility was issued as a state discharge to ground on June 24, 1985, and expired in 1990. The permit has been extended until this time. The previous permit did not have numeric effluent limits or any monitoring requirements. The new permit will have both numeric effluent limits and monitoring requirements, however, influent monitoring is not possible due to the lack of an appropriate influent monitoring station at the existing facility.

An application for permit renewal was submitted to the Department on June 6, 1996, and was accepted by the Department on July 1, 1996, and advertised on September 11, 1996. No changes to the system have been made since that time. A new application was submitted on September 5, 2002. The application was for a state waste discharge permit to discharge to ground, however, after reviewing the application the Department determined that the discharge configuration (to a seasonal stream) requires an NPDES permit. The application was accepted as an application for an NPDES permit.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility received its last inspection on August 2, 2000. Many deficiencies were noted in the system as noted in the description of the treatment system above. However, because the previous permit did not have numeric limits and no data were gathered or records kept, it has not been possible to demonstrate compliance with the permit.

WASTEWATER CHARACTERIZATION

No influent or effluent data have been gathered from this system. The new permit will require the gathering effluent data. No toxic substances are expected in this system with the possible exception of ammonia or chlorine if used in the future for disinfection.

The Park's consultants have tentative predictions of influent flow based on occupancy records. This type of analysis may be useful as a starting point for engineering plans but will not be as useful as actual flow data.

SEPA COMPLIANCE

State Environmental Policy Act (SEPA) compliance is required for major projects where soil is moved or involving shorelines or a new discharge to waters of the state is proposed. It is likely that SEPA will be required if the facility is replaced or undergoes a major modification as required by the permit.

PROPOSED PERMIT LIMITATIONS

Federal and state regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and Chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992.) The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology basis. At the present time, water quality limits cannot be determined.

The Department does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent**.** Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation**.** Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

No design criteria exists for this system. The previous permit limit for flow was 0.017 mgd, the Permittee would like to use less than 0.0145 mgd. This amount (0.0145 mgd) is the maximum size for Washington State Department of Health (DOH) permitting of on-site septic systems. The Department oversees the permitting of large on-site septic systems (LOSS) when non-mechanical systems have a flow above 0.0145 mgd, or a mechanical system above 0.0035 mgd. The occupancy records indicate that 0.0145 mgd has been exceeded in a one year period. WAC 173-221-030 defines a domestic wastewater facility as any system with a design capacity exceeding of 14,500 gallons per day (0.0145 mgd) at any common point or a mechanical system with an ultimate design capacity exceeding 3,500 gallons per day (0.0035 mgd). Depending on how a new on-site system is designed and constructed it may qualify as a LOSS and qualify for regulation by DOH rather than by the Department of Ecology.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These effluent limitations are given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (federal) and in Chapter 173-221 WAC (state). These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

The following technology-based limits for pH, fecal coliform, BOD_5, and TSS are taken from Chapter 173-221 WAC are:

Table 1: Technology-Based Limits for Lagoons.

Parameter	Limit
pH:	shall be within the range of 6 to 9 standard units.
BOD_5 (concentration)	Average Monthly Limit = 45 mg/L Average Weekly Limit = 65 mg/L
TSS (concentration)	Average Monthly Limit = 75 mg/L Average Weekly Limit = 112 mg/L

These limits are from US EPA alternative limits for waste stabilization ponds. The point of compliance for the limits will be at the discharge from the lower lagoon to the upper polishing pond.

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SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

At this time there is no 303(d) listing for Admiralty Inlet and no TMDL. The Surface Water Quality Standards or the Ground Water Quality Standards would apply to a discharge to surface or ground respectively.

The water quality limits cannot be calculated at this time due to lack of data.

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the state of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The state was issued 91 numeric water quality criteria for the protection of human health by the U.S. EPA (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

ANTIDEGRADATION

The state of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

At this time a mixing zone is not allowed. The facility does not meet AKART.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to Admiralty Inlet which is designated as a Class AA receiving water in the vicinity of the existing outfall and discharge basins. There are no other surface water discharge outfalls within one-mile of the Fort Flagler discharge. In the vicinity of Fort Flagler, which is fairly isolated, there does not appear to be any significant nearby non-point sources of pollutants. Characteristic uses include the following: water supply (domestic, industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all uses.

Water quality of this class shall meet or exceed the requirements of selected and essential uses.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliforms	14 organisms/100 ml maximum geometric mean
Dissolved Oxygen	7 mg/L minimum
Temperature	13 degrees Celsius maximum or incremental increases above background
pH	7.0 to 8.5 standard units
Turbidity	less than 5 NTUs above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge may exceed water quality criteria with the existing controls. The existing system does not constitute AKART and therefore a mixing zone is not authorized.

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

A discharge to ground will require the installation of monitoring wells with a minimum of at least one well up gradient and two wells down gradient of the point of discharge and likely more for a large infiltration field.

BOD_5--The technology-based effluent limitation for BOD_5 was placed in the permit because it is impossible to calculate water quality-based limits at this time.

Temperature and pH--The impact of pH and temperature can not be modeled with the available information

Fecal coliform—The impact from fecal coliform can not be modeled with the existing information.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits. The impact from toxic pollutants cannot be modeled with the existing information.

No valid ambient background data was available for any pollutants have been collected at this time.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing.

Toxicity caused by unidentified pollutants is not expected in the effluent from this discharge as determined by the screening criteria given in Chapter 173-205 WAC. Therefore, no whole effluent toxicity testing is required in this permit.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is unlikely to contain chemicals regulated for human health.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department does not believe that this discharge poses a reasonable potential to violate the Sediment Management Standards.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

Wastewater from this facility and its discharge does infiltrate to groundwater and ultimately to the beach and saltwater. However, no ground water limitations where placed in the permit because no groundwater monitoring wells currently exist. Rather than focusing on the impacts of the existing facility, the Department would rather have Parks devote their effort to eliminating the existing system and identifying a long-term solution to their wastewater management needs.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

Monitoring for pH, BOD, and TSS is being required to further characterize the effluent. These pollutants could have a significant impact on the quality of the surface water.

Monitoring of sludge quantity and quality is necessary to determine the appropriate uses of the sludge. Sludge monitoring is required by the current state and local solid waste management program and also by EPA under 40 CFR 503.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is consistent with agency guidance given in the current version of the Department's *Permit Writer's Manual* (July 1994) for a lagoon facility.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories.* Because there is no laboratory at this facility the Permittee will be required to send samples out to an accredited lab until the Park installs a lab and achieves accreditation.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in proposed permit requirement S.4 to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants. Condition S.4 restricts the amount of flow.

OPERATION AND MAINTENANCE (O&M)

The proposed permit contains Condition S.5 as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water quality problems the Permittee is required to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503, and Biosolids Handling regulations covered under WAC 173-308. The disposal of other solid waste is under the jurisdiction of the Jefferson County Health Department.

Requirements for monitoring sewage sludge and recordkeeping are included in this permit. This information will by used by the Department to develop or update local limits and is also required under 40 CFR 503.

The permit requires Parks to submit a solids management plan for decommissioning the existing facility. This plan must be submitted to the Department by March 1, 2005, and shall include provisions for compliance with WAC 173-308, Biosolids Management. Removal of solids from the existing facility will require a biosolids permit.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual municipal NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information

obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. The Department proposes that this permit be issued for three years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

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1995. Assessments for Ground Water Contamination Potential Fort Flagler and Sequim Bay State Parks. Ecology Report #95-304

Metcalf and Eddy.

1991. Wastewater Engineering, Treatment, Disposal, and Reuse. Third Edition.

Moore, Richard S. P.E. Peninsula Engineering, and Andrew Gerst P.E. Washington State Parks.

2000. Sanitary Sewer and Drainage Facilities Plan for Ft. Flagler State Park Prepared for the State of Washington Parks and Recreation Commission.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

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1994. Permit Writer's Manual. Publication Number 92-109

Water Pollution Control Federation.

1976. Chlorination of Wastewater.

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to issue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on October 2, 2002 in the *Port Townsend Leader* to inform the public that an application had been submitted and to invite comment on the issuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on January 22, 2003, in the *Port Townsend Leader* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Administrator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775.

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30-day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6554, or by writing to the address listed above.

This permit and fact sheet were written by Eric Schlorff.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a pollutant on an organism that occurs within a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of prevention, control, and treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (except in the case of fecal coliform). The daily discharge is calculated as the average measurement of the pollutant over the day.

Average Weekly Discharge Limitation -- The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The daily discharge is calculated as the average measurement of the pollutant over the day.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

CBOD5 – The quantity of oxygen utilized by a mixed population of microorganisms acting on the nutrients in the sample in an aerobic oxidation for five days at a controlled temperature of 20 degrees Celsius, with an inhibitory agent added to prevent the oxidation of nitrogen compounds. The method for determining CBOD5 is given in 40 CFR Part 136.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a pollutant on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Combined Sewer Overflow (CSO)--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of four discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial User-- A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Infiltration and Inflow (I/I)--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of precipitation-caused drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

Interference -- A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal and;

Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued there under (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--A volume that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in State regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

Pass through -- A discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;

b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Significant Industrial User (SIU)--

1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;

2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids are the particulate materials in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration or mass of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at http://www.ecy.wa.gov.

APPENDIX D--RESPONSE TO COMMENTS

There were comments from the Department of Health and Parks which are summarized below.

Comment from the Washington State Department of Health:

The Shellfish Program of the Washington Department of Health (DOH) supports the proposed requirement that the existing system be allowed to operate only until September 30, 2005. Our program has recently received a request for certification of inter-tidal commercial shellfish harvest from the shorelines of Fort Flagler State Park. As a result, we will be assessing the potential impact of this treatment plant on water quality on the nearby marine shoreline.

The following comments and recommendations are provided for your consideration by DOH:

1. Thank you for the inclusion of the Shellfish Notification Clause (S3.F) in the permit. However, since no disinfection occurs at the existing plant the provisions of this notification requirement need to be changed. Also, we have no record of ever being notified by Fort Flagler State Park staff of any bypass, overflow, or use of the emergency outfall pipe.

2. The August 2000 inspection report by the Department staff states that during the winter the "*percolation bed appears to allow direct discharge of high flows to the beach, as the 2' berm that according to engineering plans is supposed to exist at the bottom of the percolation bed was not visible*." During the February 1991 emergency discharge to Admiralty Inlet, the fecal coliform level was measured as 4800 fecal coliforms per 100 ml. This result provides an indication of the level of pathogens discharged to the shoreline area during direct discharges to the beach. In comparison, the marine water quality standard and the shellfish water quality standard is 14 fecal coliforms per 100 ml. Therefore, the Department should require measures to reduce the impact of direct discharge from the percolation bed to the beach prior to September 2005. These measures could include:

    - Diverting the runoff stream which is now directed into the northwest corner of the marsh via a 16-inch culvert to the beach. Reduction of surface runoff into the disposal system would increase the efficacy of wastewater percolation during periods of heavy rain. Or
    - Use of disinfection of the discharge from the pond prior to groundwater disposal. This measure is reasonable given that the Department considers this discharge to be to surface waters of the state (Fact Sheet Summary).

Ecology Response:

The permit will continue as written. The Department does not think it would be advantageous to have the Permittee install disinfection or to reroute the intermittent stream before the system is slated to be replaced. Because the time frame of replacing the system is so short (approximately two years), and Parks has the funds in place for system replacement, any interim measures could delay the system replacement. The timing of system replacement is also such that the request and review for shellfish harvest by the Department of Health will not be completed before the system is replaced. Diversion of the stream would require environmental review and approval from other agencies and installation of a disinfection system would require engineering approval from the Department and may require time to install, test and operate. The new system should be replaced before a disinfection system would be viable.

Comment from Washington State Parks:

Section "S2" – Sample Point. The sample point as described in the draft permit is, "the discharge to upper lagoon." The discharge to the upper lagoon is a perforated pipe, that is often in standing water, rendering it impractical for accessibility by our operators. The random nature of the discharge as it now exists, makes it impractical to draw a sample without the fear of contaminating our operators. State Parks is requesting further direction on this sampling procedure that is more practical given the logistics of the discharge point.

Ecology Response:

It is up to the Permittee to collect a viable sample. The Permittee has the option of installing a sampling point in the existing discharge pipe or purchasing and installing an automatic 24-hour sampling machine. An option would be to install a spigot in the discharge pipe so that a sample could be obtained without the operator going into the lagoon.

Comment from Washington State Parks:

Sampling During Discharge – Understanding that State Parks' is only required to sample during discharge events, it is not practical for our operators to sample when discharging as the system now exists. The pump to the upper lagoon is set on a float switch, which will activate at any time of the day or night when the lagoon levels reach an applicable height. Is it the expectation for us to "force a discharge event" during a practical time, and if so, at what frequency will this be expected?

Ecology Response:

The Department's intent in requiring sampling is to gather data on the quality of the wastewater that is actually discharged to the upper lagoon. The Department will change the sampling frequencies under Section S2 from "1/week" to "1/discharge event." The operator then has several options for obtaining a sample: 1) post an operator to capture any event; 2) install equipment to automatically sample each discharge; 3) install telemetry to notify the operator that an event is occurring; or 4) forcing a discharge event when the lower pond is nearing capacity or before that occurs. The last option may also be used to address the previous comment. In this case an operator may turn on the pumps temporarily to obtain a sample from a sample point.